

IN THE CLAIMS:

The following listing of claims replaces any earlier listing:

Claims 1-23 (Cancelled)

24. (Previously presented) A method for sterilizing an article in a sterilization gas atmosphere, comprising the steps of:

- (a) providing a sterilization chamber;
- (b) placing the article into the sterilization chamber;
- (c) applying a vacuum to the sterilization chamber for adjusting the pressure in the sterilization chamber to a sterilization pressure at which the boiling point of water in the sterilization chamber is lowered to a temperature below the temperature in the sterilization chamber;
- (d) supplying an amount of water to the sterilization chamber for humidifying the atmosphere in the sterilization chamber until a preselected humidification level is reached;
- (e) supplying ozone-containing sterilization gas to the sterilization chamber until a preselected ozonation level is reached;
- (f) stopping the supplying of water and ozone-containing sterilization gas and sealing the sterilization chamber for maintaining the sterilization pressure, humidification level and ozonation level, in the sterilization chamber for a preselected treatment period; and
- (g) releasing the vacuum in the sterilization chamber, wherein prior to step (c), the temperature of the article is equalized with the temperature of an atmosphere in the sterilization chamber to prevent condensation of water on the article due to localized temperature differentials when the relative humidity in the sterilization chamber approaches saturation and wherein the step of equalizing includes multiple steps of evacuating the sterilization chamber and intermediate steps of flushing the sterilization chamber with oxygen or ambient air.

25. (Currently amended) The method of claim 24, wherein the oxygen Oxygen or ambient air is at ambient temperature.

26. (Previously presented) The method of claim 24, wherein the step of equalizing includes equalizing the temperature of the article, the atmosphere in the sterilization chamber, and any components and materials in contact with the atmosphere.
27. (Previously presented) The method of claim 24, operated at a temperature in the sterilization chamber of 25 to 40°C.
28. (Previously presented) The method of claim 26, operated at a temperature of 25 to 35°C.
29. (Previously presented) The method of claim 24, wherein the vacuum pressure is between 0.1 and 10 mbar.
30. (Previously presented) The method of claim 28, wherein the vacuum pressure is between 0.5 and 2 mbar.
31. (Previously presented) The method of claim 24, wherein the amount of water is selected to achieve a level of humidity in the sterilization chamber of 85 to 100%.
32. (Previously presented) The method of claim 30, wherein the amount of water is selected to achieve a level of humidity of at least 95%.
33. (Previously presented) The method of claim 24, wherein the steps (c) to (f) are repeated at least once.
34. (Previously presented) The method of claim 32, wherein the (c) to (f) are repeated a number of times sufficient to ensure complete sterilization of the article.
35. (Previously presented) The method of claim 24, further comprising the step of passing all gases evacuated from the sterilization chamber through a means for destroying ozone to prevent emission of ozone to the atmosphere.